

Amendments to the Claims:

Please cancel claims 1-23 and 25-31 without prejudice or disclaimer. Please add new claims 32-70. This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-23 (canceled)

24 (original): A substrate for desorption spectrometry comprising an adsorbent whose binding characteristics vary in a gradient along one or more linear axes.

25-31 (canceled)

32 (new): A probe that is removably insertable into a laser desorption mass spectrometer comprising a substrate having a surface and an adsorbent bound to the surface, wherein a binding characteristic of the substrate varies in a gradient along one or more linear axes.

33 (new): The probe of claim 32 wherein the binding characteristics vary in a gradient along one linear axis.

34 (new): The probe of claim 33 wherein the adsorbent is an anion exchange adsorbent and the binding characteristic varies according to charge.

35 (new): The probe of claim 33 wherein the adsorbent is a cation exchange adsorbent and the binding characteristic varies according to charge.

36 (new): The probe of claim 33 wherein the adsorbent is a hydrophilic adsorbent and the binding characteristic varies according to hydrophilicity.

37 (new): The probe of claim 33 wherein the adsorbent is a hydrophobic adsorbent and the binding characteristic varies according to hydrophobicity.

38 (new): The probe of claim 33 wherein the adsorbent is a metal chelate adsorbent and the binding characteristic varies according to valency.

39 (new): The probe of any of claims 32-38 further comprising an analyte bound to the adsorbent.

40 (new): The probe of any of claims 39 further comprising an energy absorbing molecule contacting the analyte.

41 (new): A probe that is removably insertable into a mass spectrometer comprising:

- (a) a substrate comprising (1) metal coated with silicon oxide or titanium oxide, or (2) silicon;
- (b) a surface on the substrate; and
- (c) an adsorbent attached to the surface at a plurality of addressable locations.

42 (new): The probe of claim 41 wherein the adsorbent is an anion exchange adsorbent.

43 (new): The probe of claim 41 wherein the adsorbent is a cation exchange adsorbent.

44 (new): The probe of claim 41 wherein the adsorbent is a hydrophilic adsorbent.

45 (new): The probe of claim 41 wherein the adsorbent is a hydrophobic adsorbent.

46 (new): The probe of claim 41 wherein the adsorbent is a metal chelate adsorbent.

47 (new): The probe of claim 41 wherein the adsorbent is a reversible covalent interaction adsorbent.

48 (new): The probe of claim 41 wherein the adsorbent is a biospecific adsorbent.

49 (new): The probe of claim 41 wherein the adsorbent is silicon oxide.

50 (new): The probe of claim 41 wherein different adsorbents are attached to different addressable locations.

51 (new): The probe of any of claims 41-48 wherein the surface is derivatized with a bifunctional linker and wherein the bifunctional linker is further derivatized with a group that functions as the adsorbent.

52 (new): The probe of claim 51 wherein the bifunctional linker is attached to the surface through an inorganic oxide functional group.

53 (new): The probe of claim 51 wherein the bifunctional linker is a residue of aminopropyl triethoxysilane.

54 (new): The probe of claim 51 wherein the bifunctional linker is a residue of carbodiimide or N-hydroxysuccinimide.

55 (new): The probe of any of claims 41-48 wherein a cross-linked polymer is bound to the surface through a functional group and wherein the adsorbent is bound to the cross-linked polymer.

56 (new): The probe of claim 55 wherein the cross-linked polymer comprises cellulose, dextran carboxymethyl dextran or polyacrylamide.

57 (new): The probe of any of claims 41-48 wherein the substrate comprises a metal.

58 (new): The probe of claim 51 wherein the substrate comprises a metal.

59 (new): The probe of claim 55 wherein the substrate comprises a metal.

60 (new): The probe of any of claims 41-48 wherein the substrate comprises silicon.

61 (new): The probe of claim 51 wherein the substrate comprises silicon.

62 (new): The probe of claim 55 wherein the substrate comprises silicon.

63 (new): A probe that is removably insertable into a mass spectrometer comprising:

- (a) a substrate having a surface; and
- (b) an anion exchange adsorbent covalently attached to the surface of the substrate.

64 (new): The probe of claim 63, wherein the anion exchange adsorbent is covalently attached to the surface at a plurality of addressable locations.

65 (new): A probe that is removably insertable into a mass spectrometer comprising:

- (a) a substrate having a surface; and
- (b) a cation exchange adsorbent covalently attached to the surface of the substrate.

66 (new): The probe of claim 65, wherein the cation exchange adsorbent is covalently attached to the surface at a plurality of addressable locations.

67 (new): A probe that is removably insertable into a mass spectrometer comprising:

- (a) a substrate having a surface; and
- (b) a hydrophobic adsorbent covalently attached to the surface of the substrate.

68 (new): The probe of claim 67, wherein the hydrophobic adsorbent is covalently attached to the surface at a plurality of addressable locations.

69 (new): A probe that is removably insertable into a mass spectrometer comprising:

- (a) a substrate having a surface; and
- (b) a hydrophilic adsorbent covalently attached to the surface of the substrate.

70 (new): The probe of claim 69, wherein the hydrophilic adsorbent is covalently attached to the surface at a plurality of addressable locations.